1877 birds eye view of Burlington.

2 Burlington's Downtown Streets

Design Considerations for Project Development

This section provides foundational information regarding the existing and future downtown conditions that will influence the design of projects, including land uses, transportation network, utilities, and other factors.

The Boundaries of Downtown

For the purposes of these standards, the downtown is defined as a 6 × 6 block grid bounded by Pearl and Maple Streets to the north and south, and Battery and Union Streets to the west and east.

Because of downtown's varied terrain and organic development, its apparent boundaries have shifted over time. While Battery on the West and Pearl on the North have remained clear edges, to the south and east the boundary has slowly expanded into parts of the adjacent residential districts. On the south, most of Main Street was a clear edge until commercial activity spread further south to King and Maple to take advantage of flat waterfront frontage. On the east, Winooski formed a sharp boundary due to the ravine; but as bridges were built and the ravine was eventually filled in, the downtown core gradually expanded eastward towards Union as important links developed uphill to the institutions.

If the geometry of the downtown grid were a perfect 6 × 6 checkerboard, this would create 84 individual street segments. However, over time some short street segments (such as Center) were added, and other street segments (such as Bank, St. Paul and Pine) were removed during redevelopment in the 1970s, leaving approximately 82 individual street segments, including the planned restoration of a block segment on each St. Paul and Pine Streets between Cherry and Bank Streets.

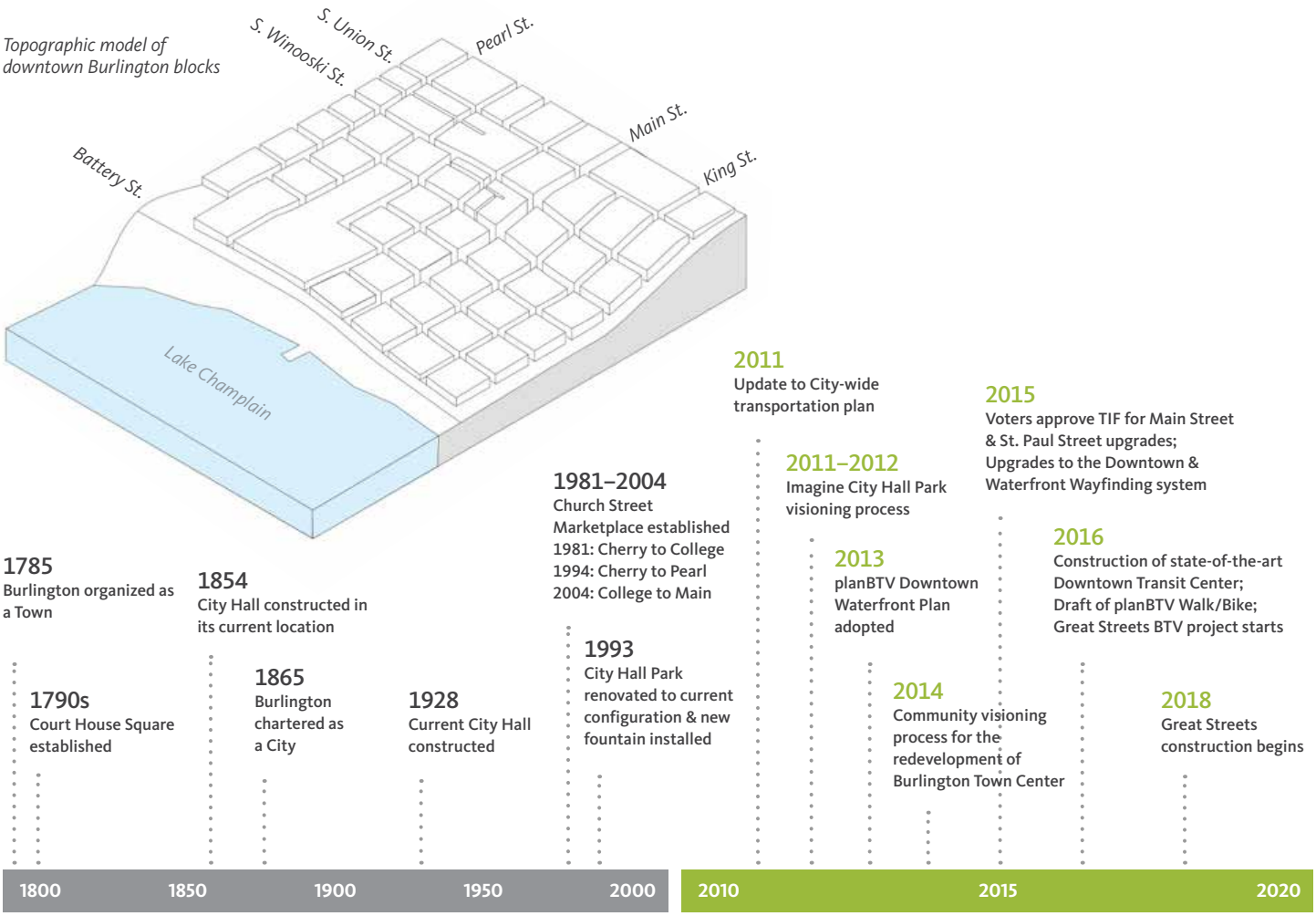
Since many street design projects affect only a single street segment, or a small group of segments, these standards are likely to be applied over an extended period of time on a large number of individual construction projects. The standards are intended to be strong enough to create a discernible visual integrity to downtown's public space, but flexible enough to allow for change over time, as individual projects are realized. Furthermore, these standards apply to all streets throughout the downtown except for Church Street; their application may be further limited or modified as noted in the design considerations for each individual corridor.

Existing Conditions

HISTORIC GRID ON SLOPING TERRAIN

The original street layout for Burlington dates back roughly to 1785. At its core, the layout was comprised of regular square blocks, 400' × 400', arranged in a checkerboard pattern. By 1830, the downtown core was built out to a 5-block by 6-block grid. Though the regularity of the design suggests that it was laid on flat terrain, the downtown actually slopes significantly to the southwest, at approximately 45 degrees to the grid. Historically, the 30-block grid was missing 3 blocks at the southeast corner where the Winooski Ravine precluded building, another indication of the complex terrain, and 7 blocks are missing today as a result of the demolition and subsequent redevelopment of the northwestern portion of the downtown during Urban Renewal.

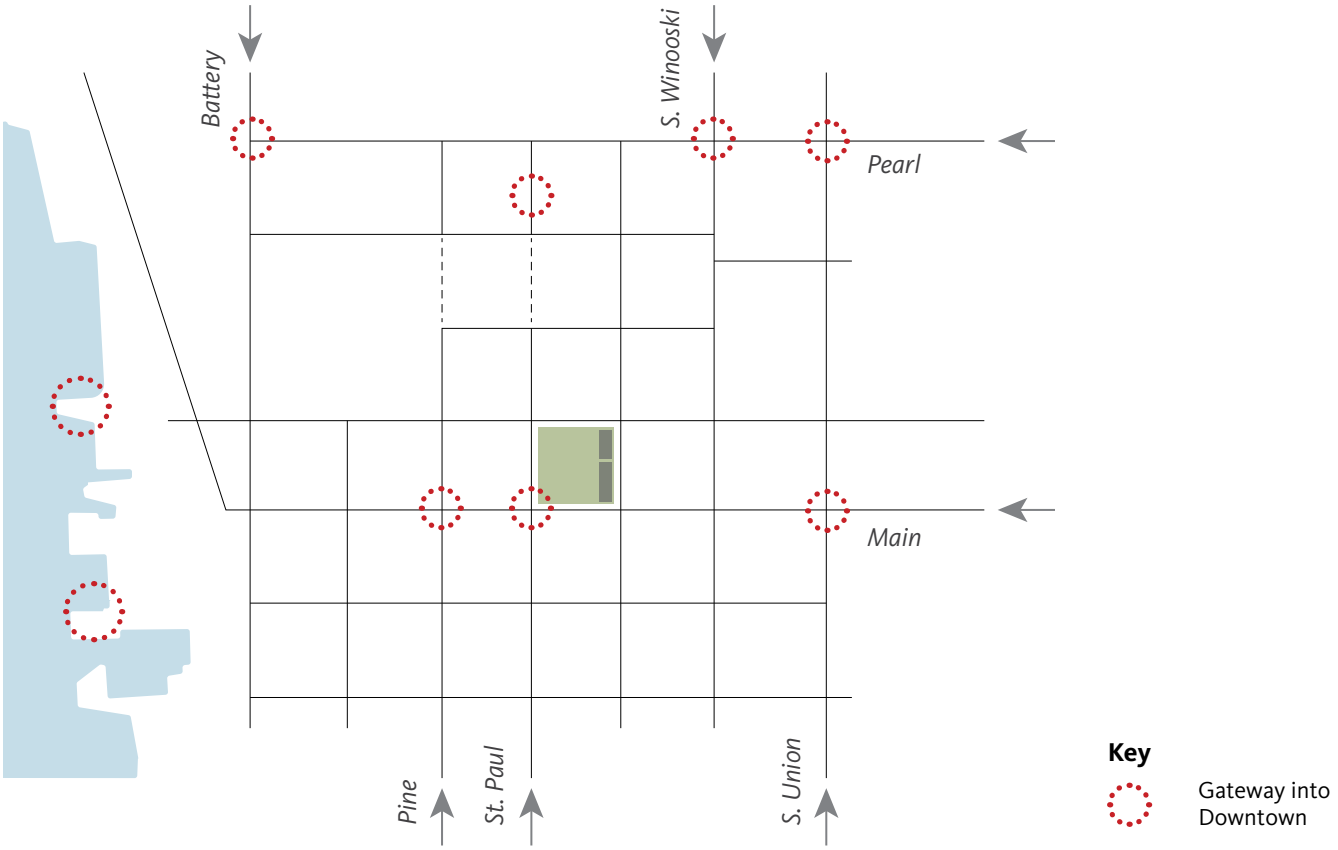
While the two-dimensional layout suggests regularity, the terrain creates significant variety in the character of the streets, which have varying slopes, sometimes even within a single block. This variable sloping impacts views, human and vehicular movement, drainage, architectural design, and retail frontage. Furthermore, the long history of Burlington's built environment means that there are decades of public and private investments that have occurred within the space now dedicated to the public right-of-way. As a result, there are many situations in which private structures and relics of antiquated utility systems encroach into the public right-of-way—both above and below ground—and are not necessarily accounted for. The variations create both opportunities and challenges for those designing individual street blocks or entire corridors. Existing and proposed conditions relating to many of these characteristics as they're known today are outlined in the sections that follow.



Throughout its history, the City has made significant investments in downtown and the public realm. In recent years, residents have provided significant input on the next generation of investment in downtown.

GATEWAYS

There are multiple gateways into downtown. However, due to the current configuration of streets leading into downtown, gateway points are somewhat irregular in their location while the streets themselves define a clear perimeter around the downtown core. Nevertheless, gateways, including those on the waterfront, are opportunities for the design of the public right-of-way to welcome visitors to downtown. They are transition points and possible key locations for wayfinding information in the public right of way.



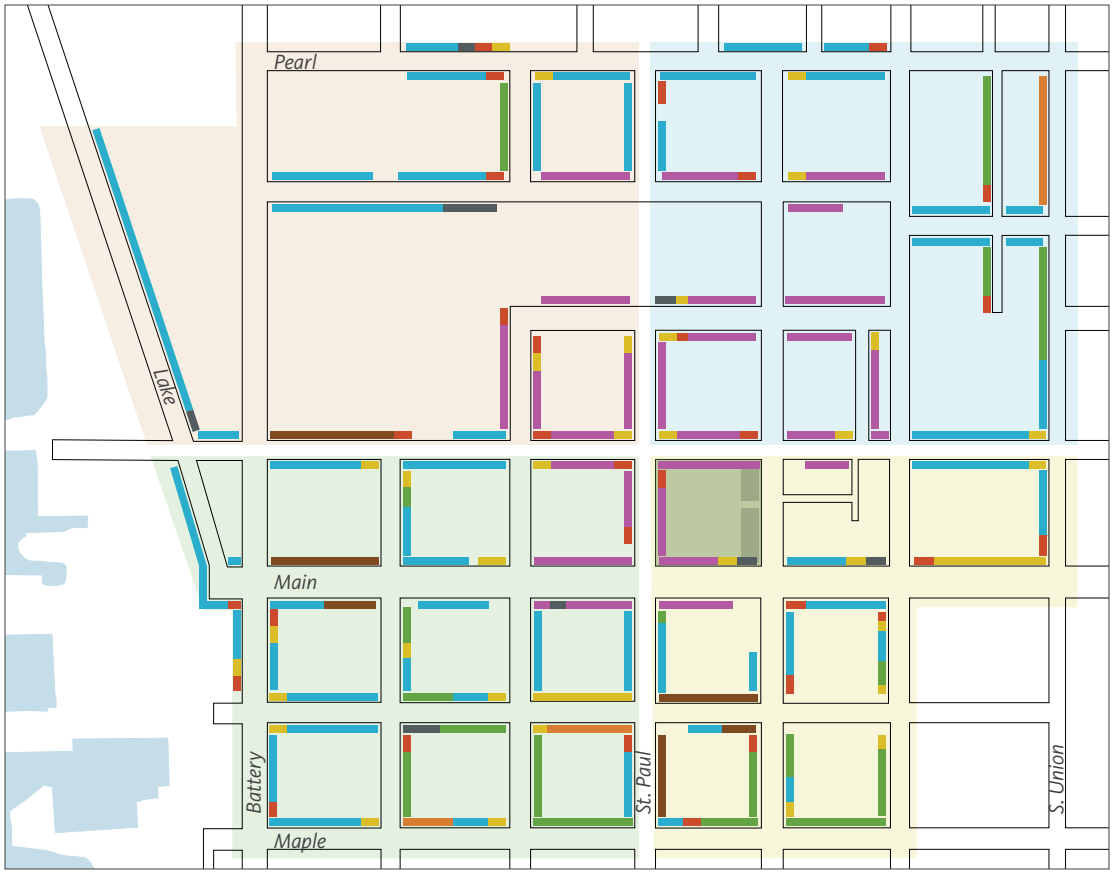
Gateway Streets and Gateway Points in downtown Burlington via all modes of transportation.

ON-STREET PARKING

The *Downtown Parking Management Plan* provides detailed recommendations for comprehensive on-street and off-street parking management aimed at more efficient utilization and better financial performance, with an overall goal of expanding access to downtown via all modes of transportation. Included in the recommendations is reconfiguration of the types and rates of on-street parking for specific streets.

The maps of existing and proposed parking scenarios come from the Downtown Parking Management Plan. As street reconstruction projects are implemented, these recommendations may be revisited and/or modified. When considring street parking scenarios for Great Streets projects, consult most recent version of the plan for any updates to the recommended parking system.

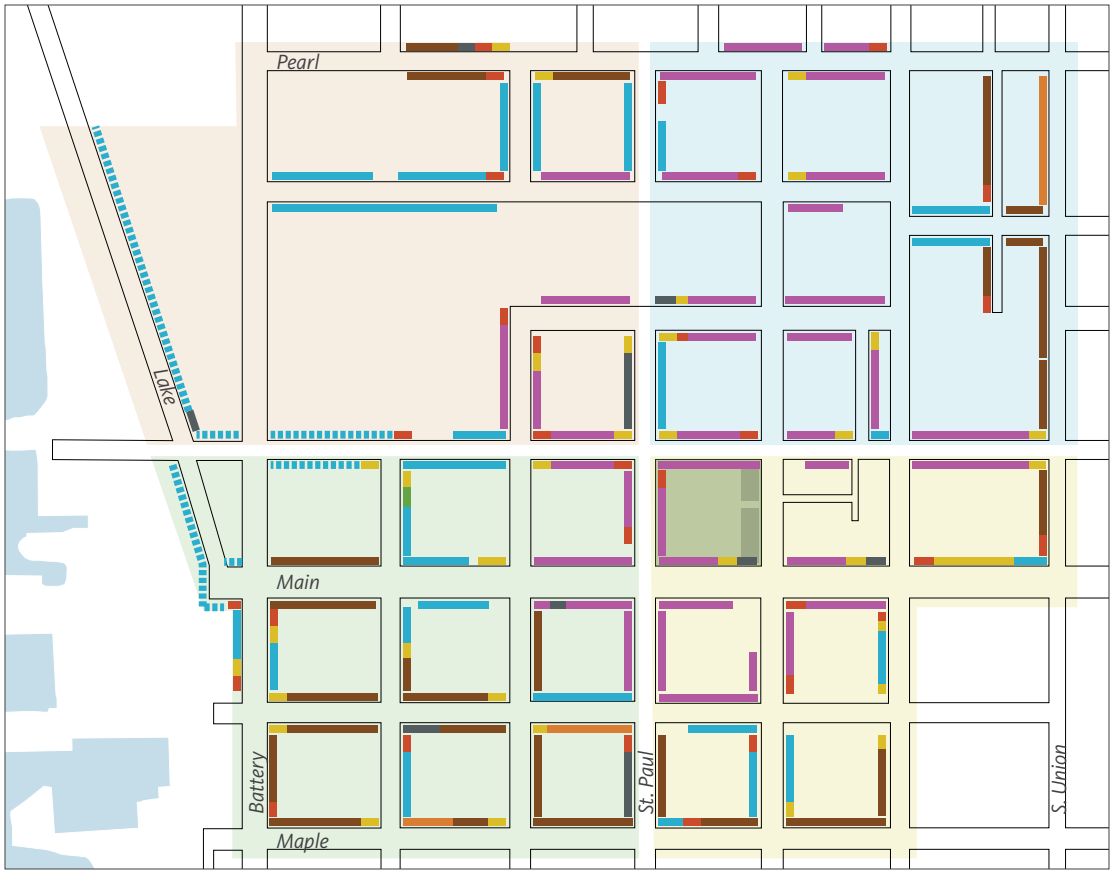
Existing On-Street Parking



Existing On-Street Parking Type				Meter Zones	
	Short Term (15–30 min.) *		Handicapped		1
	Medium Term Meters (1–3 hrs.)		Other		2
	Long Term Meters (10 hrs.)		Unrestricted		3
	Smart Meters (no time limit)		Residential Permit		4

**These spaces may be metered or time limited up to 30 minutes.*

Proposed On-Street Parking



Proposed On-Street Parking Type				Meter Zones	
	Tier 1 Meters (30 min.)		Tier 4 Meters (10 hrs.)		1
	Tier 2 Meters (no time limit)		Handicapped		2
	Tier 3 Meters (3 hrs.)		Other		3
	Tier 3 (seasonal) *		Residential Permit		4

** Seasonal meters operate as Tier 3 from May 1 to October 31, and as Tier 4 from Nov. 1 to April 30.*

STREET TREES & TREE BELTS

There is a large gap in Burlington's tree canopy in the densest part of downtown, where tighter sidewalk conditions are less favorable to tree growth. While the area surrounding Burlington is lush and green, canopy coverage is severely limited downtown in areas of high pedestrian activity and where overhead or underground utility locations pose a challenge.

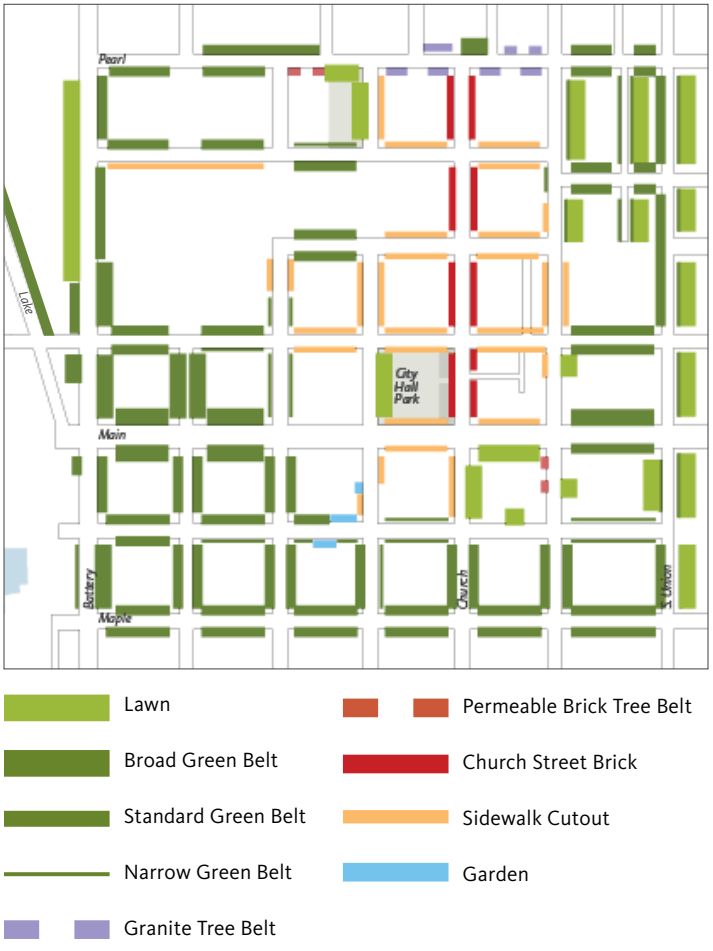
Handling stormwater and producing healthy street trees are interrelated goals. The leaf canopy of large trees can hold and slow rainfall. On the ground, the treatment of the tree belt is critical to avoid erosion and to slow water flow. Existing green belts are subject to trampling, erosion, and unmitigated stormwater runoff. The current downtown 4' × 4' street tree grates are not ideal for supporting long term tree growth. Though they protect against compaction, they require maintenance and are subject to frost-heaving.

Currently, Burlington's downtown street trees are exist within a mosaic of tree belt conditions, many of which are not successfully supporting trees to maturity. Under the sustained intensity of Burlington's urban pedestrian traffic and winter snow clearing strategies, the downtown street tree canopy is caught in a cycle of planting and replacing young trees that don't have a chance to mature.

Two methods of street tree planting are currently under-performing in their ability to grow mature trees: sidewalk cutout planters and standard tree belts lined with turf. Great Streets BTV's calls for the complete replacement of sidewalk cutout planters and the targeted reduction of turf-covered tree belts, especially in areas of high pedestrian traffic.

While the area surrounding Burlington is lush and green, canopy coverage is severely limited downtown in areas of high pedestrian activity.

Existing Tree Belt & Green Belt Zone Conditions



Existing Conditions

Sidewalk Cutout

Streets: Bank, Cherry, Church, College, Main, Pine, St. Paul, S. Winooski

Sidewalk cutouts are the most common street tree planting condition on streets with high pedestrian activity. Typically, Sidewalk Cutouts are a 4'x4' opening in the concrete sidewalk with a tree planted in the center. Few of these have healthy and mature trees in them. Several host dead trees or are empty, while others present trip hazards. Where iron tree grates have been provided to protect soils, larger trees sometimes heave grates or grow into them. Without organic planting soils under the surrounding pavement, or the ability for soils to exchange air and water with the atmosphere, most trees can't survive in them for many years. Only Honey Locusts and a few Elms are surviving in these conditions and growing up to moderate size.

Standard Green Belt (width: 5'–10')
Streets: Bank, Battery, Buell, Champlain, Cherry, Church, College, King, Maple, Pearl, Pine, St Paul, S Winooski

Established in the 2011 Transportation Plan's Street Design Guidelines, the minimum tree belt width is 5'. In the downtown area, standard green belts between 5'–10' in width, typically planted with turf, are the most common existing street-tree planting condition. Where pedestrian activity is high and slopes are steep, soils in these green belts are often compacted and eroded, while in residential areas these green belts support some of the streetscape's largest trees. This is especially true where open lawns are present on the back side of the sidewalk. Where tree roots can reach under sidewalks to larger soil volumes, they can support larger canopies.

Lawn
Streets: Battery, Main, Pearl, S. Winooski, St. Paul, S. Union

Trees on private land function as part of the streetscape on several blocks in Burlington. Large, open soil volumes support trees which survive to produce large canopies. For example, on Pearl, Main and S. Winooski, large trees in lawns shelter sidewalks with tree belts that are too narrow to support similarly-sized trees. Where this condition exists, it is a vital component of Burlington's urban canopy.

Broad Green Belt (width: >10')
Streets: Battery, Champlain, Main

Broad green belts host trees planted along some of the busiest streets and widest sidewalk setbacks in Burlington. Trees in these green belts are planted in turf; sometimes this turf is healthy, but frequently, it is compacted and eroding. Similar to standard green belts, turf isnt a successful furface material for maintaining tree health or managing stormwater runoff for areas with steep slopes and/or high pedestrian activity.

Narrow Green Belt (width: <5')

Streets: Battery, Cherry, College, King, Orchard Terrace, Pearl, Pine, S. Union, S. Winooski

Narrow Treebelts are remnant spaces left between sidewalks and street edges. In some downtown locations, these can support trees. Where Narrow Treebelts are the slimmest, they can often only support only turf. In some residential areas, Narrow Treebelts support trees because open lawns with soil volumes are available across a narrow sidewalk. Narrow Treebelts are an acceptable condition only in residential areas with low foot traffic.

Granite Tree Belt
Streets: Pearl

Granite cobbles line the treebelt in lieu of turf. Roots and soils are protected from compaction by the cobble paving and steel/iron tree grates or crushed grael. Some trees in this condition are surrounded by vertical black-painted steel tree guards. Structured soils or horticultural soils in Silva Cells extend beneath concrete sidewalk to achieve required soil volume. This pavement type does not function as a permeable surface. Joints quickly become filled with compacted dust and debris.

Permeable Brick Tree Belt
Streets: S. Winooski, Pearl

Permeable brick pavers line the tree belt in lieu of turf. Roots and soils are protected from compaction by the brick paving and iron tree grates. Trees in this condition are surrounded by vertical, black-painted-steel tree guards. Permeable brick covers uncompacted horticultural soils in Silva Cells. Because soils are not exposed, erosion in this condition is limited. The brick-covered tree belt is a useful space for pedestrian overflow and streetscape furnishings, although tree grates can occasionally become a trip hazard.

Church Street Brick
Streets: Church and adjacent segments of Bank, Cherry, and College

A unique tree planting condition is utilized along Church Street, which is designed for high pedestrian activity. Two sub-conditions are present. On Church Street, circular metal grates cover the sidewalk and vertical tree guards protect trunks. On adjacent streets, an open-centered cone of granite cobbles surround the street tree trunk. Nearly all of the trees in the Church Street planters are Honey Locusts—an extremely urban tolerant tree. Where tree grates and cobbles are present, they occasionally become a trip hazard.

Garden
Streets: King & St. Paul

Two areas of garden-like street-tree planting exist on King and St. Paul streets. Adjacent to a new building or within the standard treebelt area, trees have been planted in groundcovers other than turf for aesthetic affect and erosion control.

STORMWATER

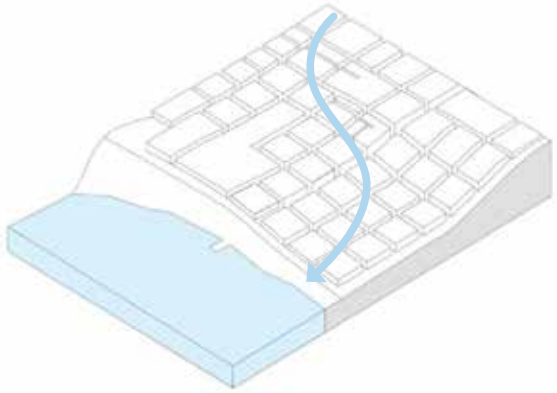
Reducing phosphorus from Lake Champlain and ensuring the continued capacity of the City's main wastewater treatment plant are serious issues that must be accounted for as the City grows and is redeveloped. Today, most of the stormwater runoff from streets, parking lots, and buildings within the downtown area is quickly conveyed via underground pipes to either Lake Champlain or the City's wastewater treatment plant. There is a great need to change this current engineering practice to a more sustainable approach that improves water quality in Lake Champlain and also relieves some of the burden on the City's combined sewer system. This newer approach, called green infrastructure, manages runoff closer to the source, on the surface, and within landscape or pervious paving systems and mimics the natural hydrology of Burlington before urbanization occurred. Using landscape systems such as rain gardens, stormwater planters, and trees, stormwater runoff can be captured and disbursed into the ground before it reaches the stormwater system or a waterbody. A downtown green infrastructure network creates a series of decentralized, shallow, and widespread landscape-based stormwater facilities used to capture, slow, cleanse, and potentially infiltrate runoff. Because downtown Burlington has a mixture of street types ranging from slow-speed residential to high-speed arterial streets, the "toolkit" described later in this plan (*page 216*) has stormwater strategies that fit in a variety of street typologies.

Many of downtown Burlington's streets have landscaped spaces that can be retrofitted with green infrastructure or have underutilized asphalt space that can be converted to landscape space designed to capture stormwater runoff. Capitalizing on existing space that is currently inefficiently designed is a vital step in creating a green infrastructure system. Employing a robust urban tree canopy is equally important.

Trees are an undervalued green infrastructure system along highly urban downtown streets. Perhaps it is because the growing conditions are so challenging for street trees to reach maturity. Trees, considered the "lungs" of our landscape, should also be considered our umbrella for stormwater management. Achieving a healthy canopy of street trees has many stormwater benefits, including capturing and evapotranspiring rainfall from branches and leaves before the rainfall even hits the ground. In addition, trees also slow rainfall as it moves down the branching pattern and trunk of the tree, and finally absorbs runoff within its root system.

Utilizing small scale landscape-based and hardscape stormwater systems not only helps downtown Burlington improve it's economic, social, and environmental conditions, but it is also a cost-effective way to prepare for the effects of climate change. Increasing amounts, duration, and intensity of rainfall due to climate change is a reality for Vermont. Planning and building natural and inter-connected stormwater management facilities during the next few decades will help as a first line of defense against changing climate. Because it is anticipated that rainfall intensities are expected to increase, design approaches should change accordingly to better adapt to these conditions.

The decentralized stormwater approach for downtown Burlington spreads shallow stormwater facilities throughout the entire streetscape as much as possible, thereby capturing runoff before it becomes too concentrated and heavy in volume. The decentralized approach would allow for much greater plant diversity, and integration of stormwater management into other streetscape amenities. Multiple smaller facilities placed along a street to capture runoff more evenly before volume and concentrations become too intense during strong storm events. This approach is important because installations of single rain gardens, or grassy tree belts that become compacted and eroded have proven to be insufficient to handle current runoff, and will become increasingly incapable of accomodating stormwater.



Above and right: downtown Burlington topography and stormwater flow from northeast to southwest.

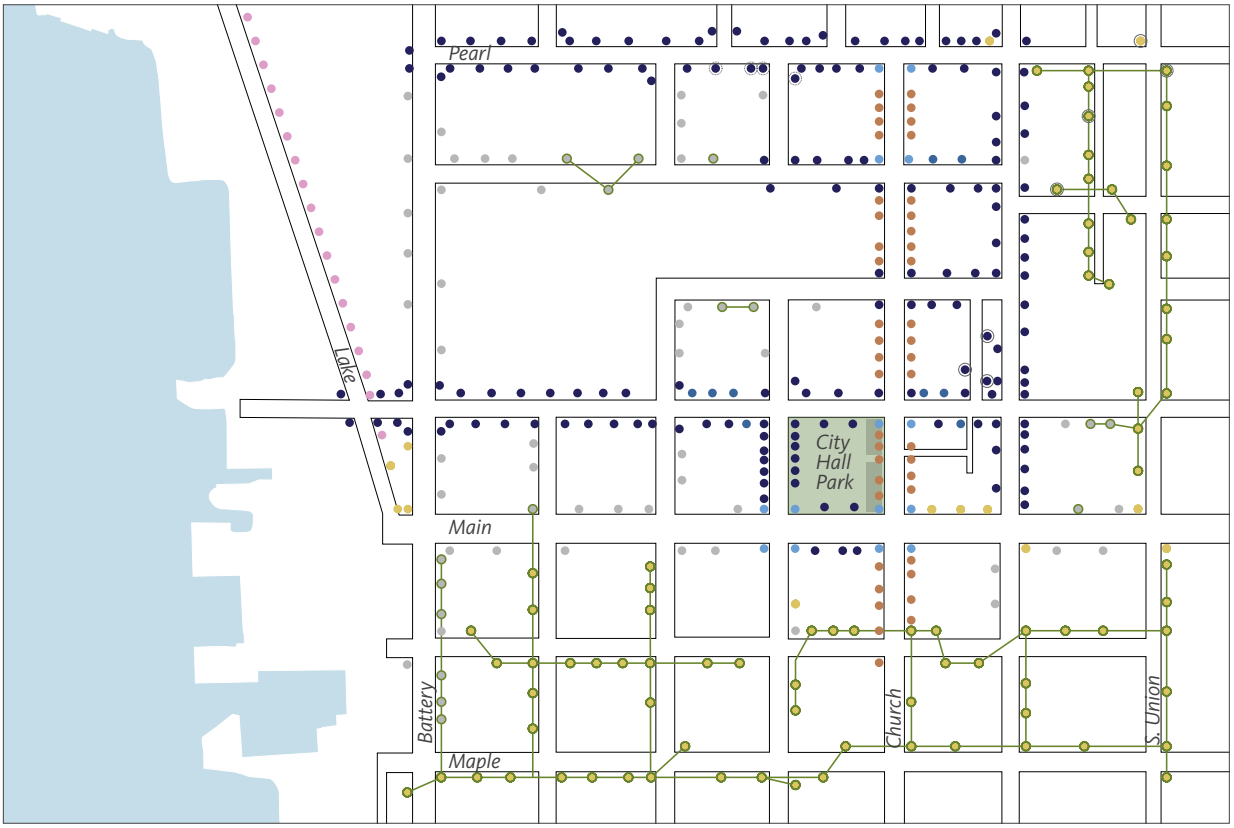
STREET LIGHTING

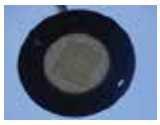
The downtown street lighting system serves many purposes, providing for visibility that promotes pedestrian and traffic safety, illuminates pedestrians in areas where they leave the sidewalk and could conflict with vehicles, and illuminates areas of importance-- all of which must be done while adhering to dark skies principles.

The existing street lighting inventory in downtown Burlington consists of a range of pole types (steel, aluminum, concrete, and fiberglass) at varied heights and inconsistent spacing with cobrahead, dome-like, and teardrop type luminaires (both LED & HID). Burlington Electric Department's (BED) existing concrete poles are systematically being phased out and replaced by fiberglass poles. Most luminaires are LED, with the exception of high pressure sodium (HPS) cobrahead luminaires still prevalent along King, Maple, and S. Union Streets. BED's current practice is to replace the HPS luminaires at end of life with LED cobrahead luminaires. At least half of the existing lighting ensembles currently utilize the Philips "Domus" full-cutoff 4000K cool-white LED luminaire on a custom gooseneck arm mounted to a round steel pole.

With the top of the gooseneck arm approximately 30 feet above ground, this configuration raises questions about the appropriateness of scale to the character of downtown Burlington. As with most full-cutoff area LED luminaires, when the luminaire is energized, high-angle glare from the light source can be observed. Based on typical existing condition lighting calculations, in most cases the street lighting can afford to be dimmed or reduced while still meeting recommended IES RP-08 light levels.

Existing Street Lighting Conditions




Domus 50 (single, tall) LED


Domus 50 (single, short) LED


Domus 50 (double) LED


Renaissance 20 LED


Lake St. Fixture


Cobra-head HPS


Cobra-head fixture LED

Overhead power

PUBLIC ART

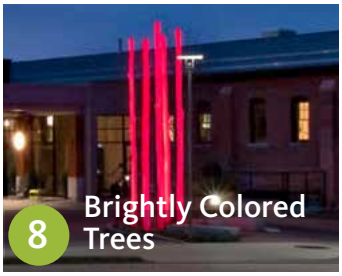
Art is an integral part of the fabric of a city. It helps tell the story of the city, creates a unique sense of place, contributes to neighborhood vitality and stimulates new economic activity. The Art in Public Places program supports the development of art in the public realm that is creative, well-crafted and integrated into the physical, cultural and historical context.

Public artwork in downtown should strive to:

- Contribute to a more vibrant and memorable public space for residents, workers, and visitors.
- Create a sense of place.
- Encourage exploration of the City and promote public education opportunities.
- Celebrate the city's diversity and promote people-friendly places.
- Range from monumental scale to intimate streetscape elements.

Within the public streetscape, there are many opportunities for public art: parklets, plazas, interactive features, stand alone sculptures, and other installations. Standard public works elements like sidewalks, crosswalks, catch basins, vents, manhole covers, and traffic utility boxes, and functional elements such as benches, bike racks, and information kiosks all can be customized. While these standards present a palatte of "typical" elements that should be utilized in the public realm, many of these elements can become art. In the case of a unique, custom element, these standards provide guidance on the required dimensions, performance criteria, and placement which elements must meet. It is critical that all public art have a maintenance plan and schedule before installation.

While outside the purview of these standards, art should be encouraged in private development. This helps connect the public and private realms, and adheres to the Great Streets principle that private frontages are the unique and authentic expression of Burlington's character. Blank walls (if unavoidable) are opportunities for art, as are empty storefronts which can be utilized for temporary art installations to enliven the streetscape.

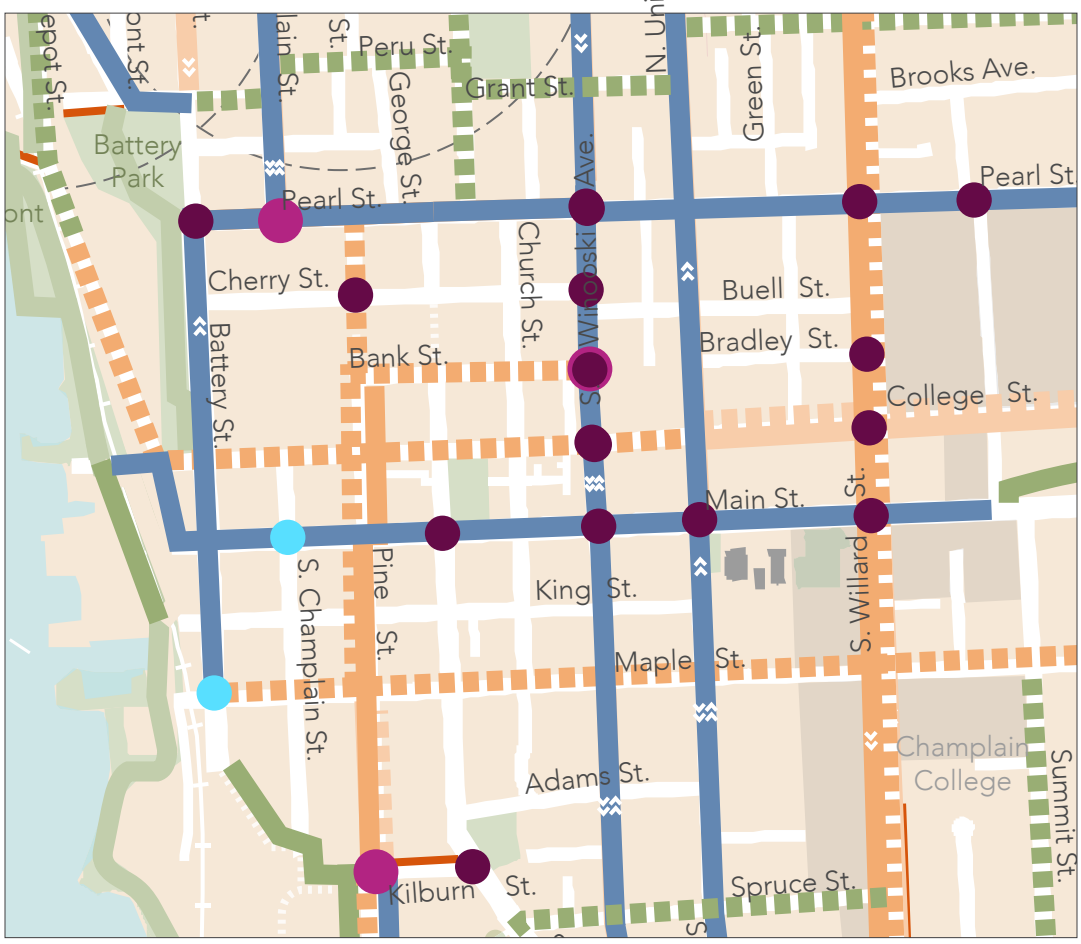


These images represent a sample of public art in downtown Burlington based on the Burlington City Arts Art in Public Places website and inventory, as it existed in December 2017.

Future Influences

FUTURE PEDESTRIAN & BICYCLE FACILITIES

PlanBTV Walk Bike envisions a fully connected bicycle network that appeals to people of all ages and abilities. In total, the plan adds new bikeway types to the city's streets, including protected bikeways, neighborhood greenways, advisory bike lanes, and bicycle priority lanes, also known as "super sharrows." More details on future bicycle facilities and plans can be found in the Plan BTV Walk Bike Master Plan. Information on the proposed bike facilities has been integrated into the design considerations for each street corridor in the sections that follow.



Long-Term Pedestrian & Bikeway Network

Proposed Walk Projects
- Recommended New Sidewalk
- 12-mo Intersection or Crossing Upgrade
- Intersection or Crossing Upgrade

Proposed Bikeways/Paths
- Shared Use Path
- Protected Bike Lane
- Neighborhood Greenway (includes Traffic Calming)
- Buffered/Conventional Bike Lane
- Advisory Lane
- Shared Use Lane Markings with Traffic Calming
- Potential Path Easement

15-Year Bikeway Network Plan—planBTV Walk Bike Master Plan

PRIORITY INTERSECTIONS FOR SAFETY UPGRADES

The information in this chart has been taken from the planBTV Walk Bike Master Plan.

Location	Key Problems	Ideas to Consider	Next Steps
Bank & S. Winooski	Conflicts at driveway crossings (City Market and Simons gas station); vehicle speed and lighting also factors	Reduce speeds thru lane reassignment; Land use/urban design/access changes to reduce driveway crossing distances and conflicts.	Corridor Study planned; demos/ pilots of curb extensions and lane reassignment while study is developed
College & S. Winooski	Turning traffic failing to yield to pedestrians in crosswalk; lighting; speed also factors	Mini-roundabout; reduce crossing distance and/or speeds with curb extensions	Corridor Study; demos/pilots of curb extensions and lane reassignment while study is developed
Main & S. Winooski	Turning traffic failing to yield to pedestrians in crosswalk; long crossing distance and speed also factor	Advance or exclusive pedestrian phase; roundabout; reduce crossing distance and/or speeds with curb extensions	Great Streets initiative; Corridor Study; demos/pilots of curb extensions while design is developed
Main & St. Paul	Turning traffic failing to yield to pedestrians in crosswalk; long crossing distance and speed also factor	Roundabout; reduce crossing distance and/or speeds with curb extensions	Great Streets Initiative (Downtown TIF project); demos/ pilots of curb extensions while design is developed
Pearl & N. Winooski	Southbound left turn traffic fails to yield to pedestrians in crosswalk on Pearl.	Exclusive or advance pedestrian phase; Curb extensions to reduce speeds and crossing distance, and enhance visibility	Corridor Study; demos/pilots while study is developed
Cherry & S. Winooski	Turning or side street traffic failing to yield to pedestrians in crosswalk	Curb extensions across Cherry to increase visibility and reduce crossing distance; roundabout; advanced pedestrian phase	Corridor Study; demos of curb extensions while study is developed
Maple & Battery	Lack of pedestrian signals; Turning traffic failing to yield to pedestrians in crosswalk	Reduce distances with curb extensions; exclusive pedestrian phase	Pedestrian signals, upgraded curb ramps/sidewalk access improvements to be installed.

CITY'S OFFICIAL MAP

Connecting to the waterfront remains an important priority for Burlington's downtown. Many of the existing east/west streets feel cut off from the lakefront. Connections to the water's edge, whether they are visual or physical should be strengthened. For more details on the the proposed streets, public ways, public parks and other public lands and visual corridors shown on this official City map (Figure 1), reference the City's Zoning Ordinance (Section 4.2.2 and Map 4.2.2-1 Downtown & Waterfront Core Official Map).

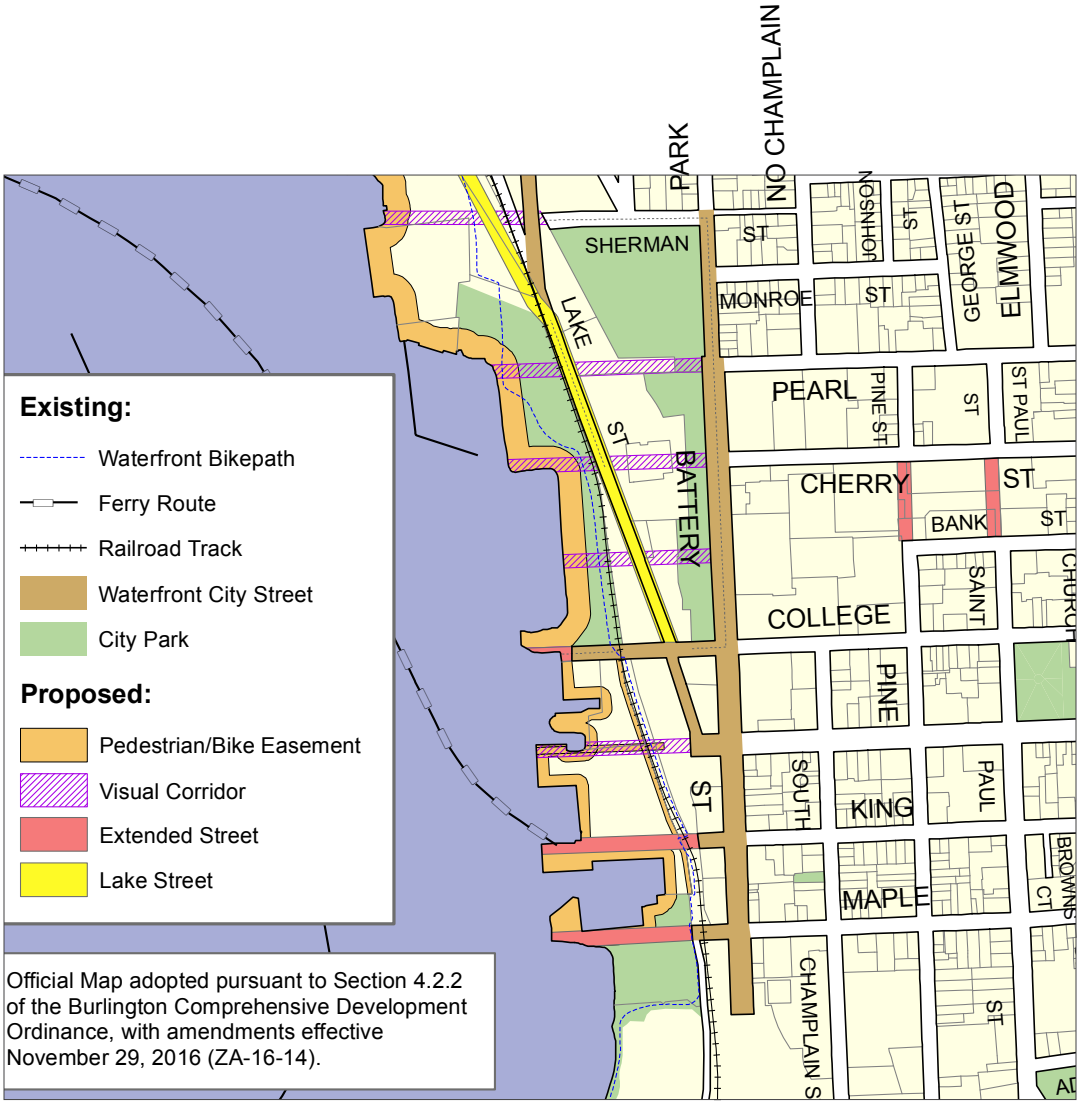


Figure 1: *Downtown & Waterfront Core Official Map—Burlington Zoning Ordinance*

RETAIL FRONTAGE

Active frontage (shops, restaurants, cafés, historic sites, cultural venues, etc.) is primarily concentrated along and parallel to the Church Street corridor, with only intermittent frontage along many of the other downtown streets--particularly along Main Street. The making of a great street is not only dependent on the quality of the public realm, but also the success and liveliness of private storefronts and buildings that face that public realm. The streets standards outlined in this document along with the guidance outlined in *planBTV Downtown Code* (Figure 2) are intended to promote an active and intentional relationship between the public and the private realm. More information on the "Shopfront Frontage Required" designated streets can be found in section 14.5.13 of the code.

Diagram of existing active frontage space

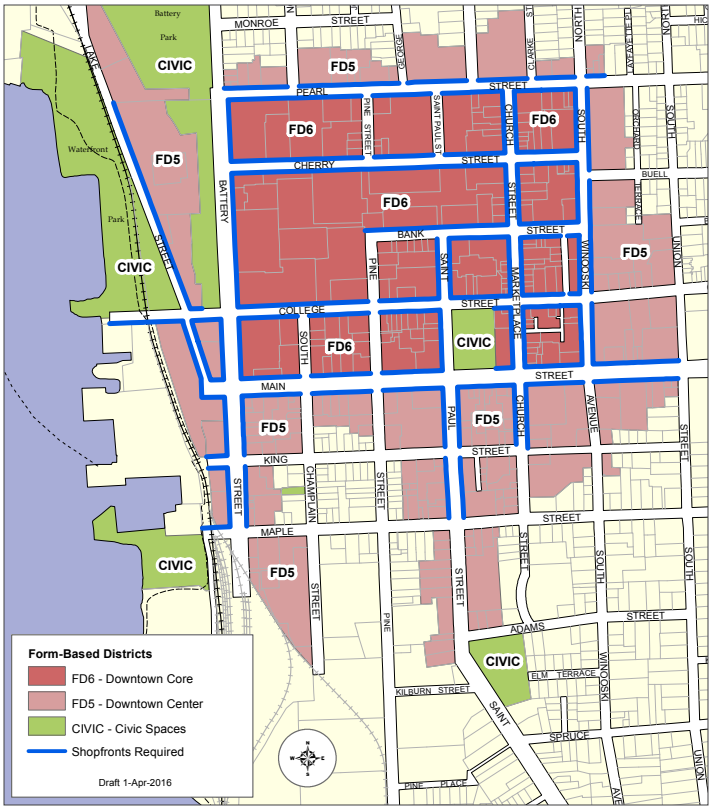
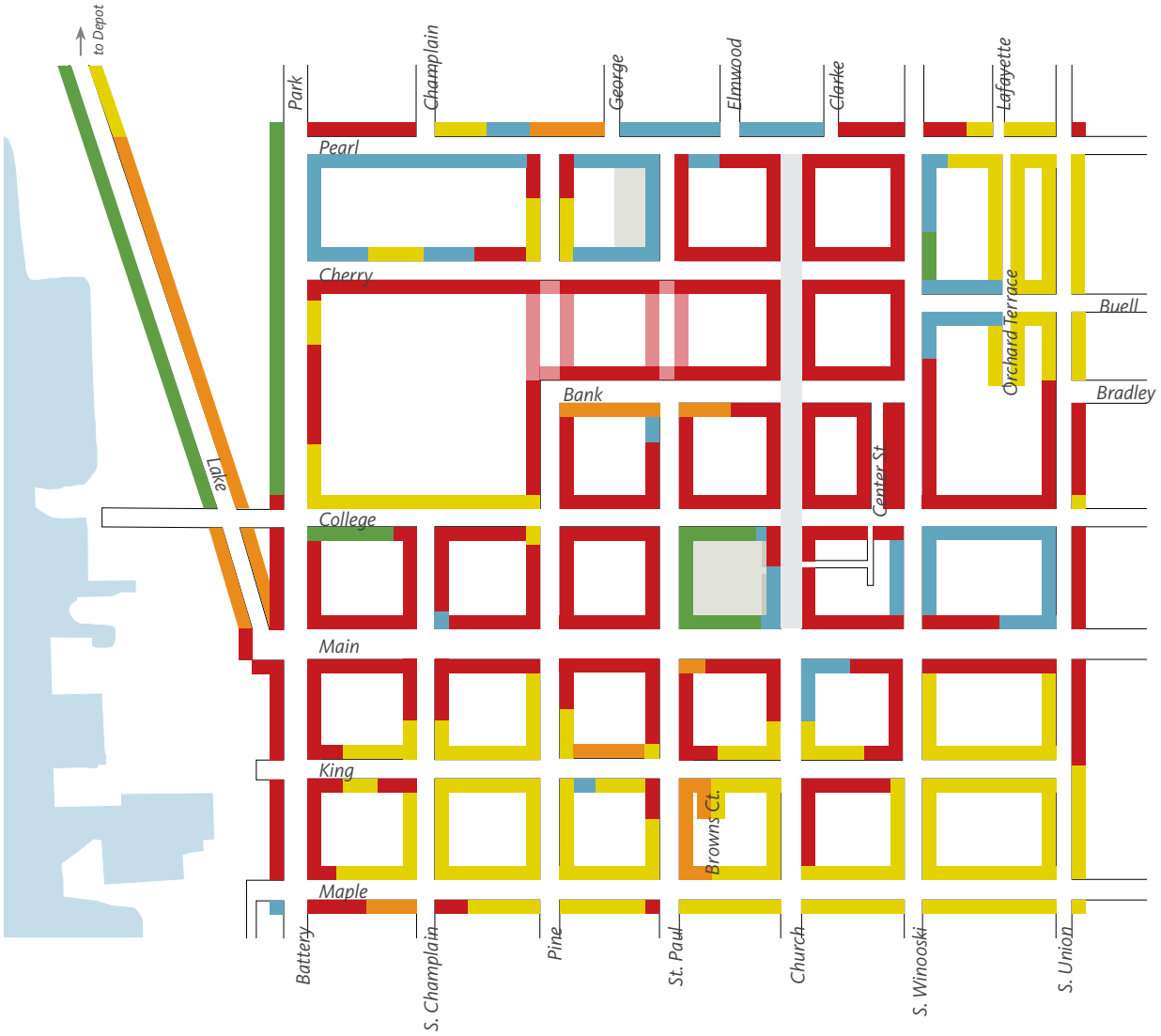


Figure 2: *Map 3 Shopfront Required—planBTV: Downtown Code*

Design Considerations for Street Corridors

This section provides additional information regarding existing and future conditions that will influence the design of street corridors and individual projects within them.

Downtown Burlington Street Frontages by Land Use



Commercial

Civic/ Institutional

Residential

Open Space/Park

Mixed Use

Primary East–West Streets

PEARL ST.

Pearl Street is a major historic connector and thoroughfare. It provided the original link from Winooski Falls to the shores of Lake Champlain. Today it functions as an important northern boundary for downtown and northern terminus of Church Street. It is an important connector between downtown, the Old North End neighborhood, the institutions on the hill, the City of Winooski, and terminates at Battery Park overlooking the waterfront. It is highly varied in its land uses, character and scale.

The corridor carries a significant number of bus lines and transit stops (including regional and interstate bus stops) as it is one of the east–west streets that frames the new transit center. The corridor currently features on-street parking, while in some sections there is parking only on one side. The planBTV Walk/Bike plan indicates that this portion of Pearl Street should feature a protected bike facility. The City is currently planning for the corridor to be realigned to have single travel lanes, parking closer to Battery Park, bike lanes in each direction (either buffered or regular), and curb extensions for crossing Pearl Street. The intersection at Pearl and Battery will also be narrowed due to the elimination of one of the right-turn-only lanes from Battery onto Pearl.

Design Considerations

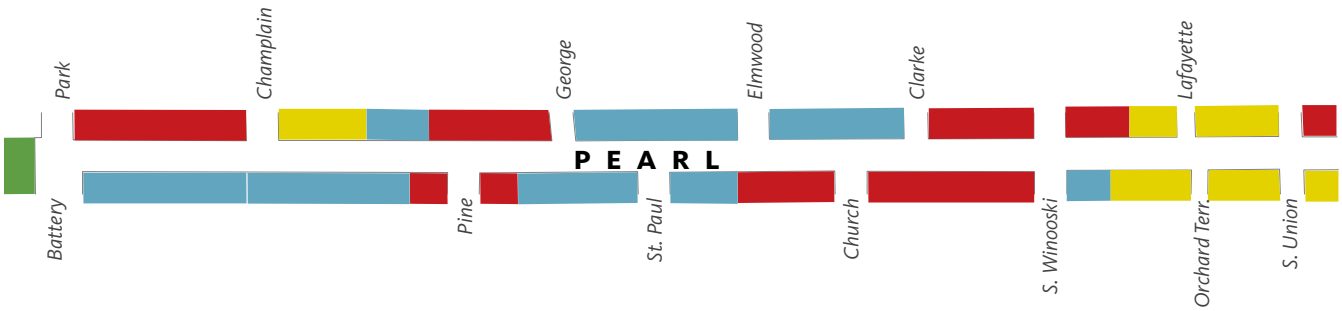
With only a 66' ROW, an offset grid on its north and south sides, many curb cuts and driveways, and few street trees, future designs for Pearl Street will be challenged to meet the many transportation priorities that have been identified for it. Opportunities for expanding its ROW may need to be considered in order to create a successful balance of users.

Existing Character/Uses

Urban Regional Linkages	Major historic connector from Lake Champlain to Colchester and Winooski
Terminus within Downtown	West: Battery Park
Terrain	Gently sloped
High Point/Low Point	High: 239' @ Union Low: 211' @ Battery
Views	To Battery Park and Adirondacks; (preserved as a "visual corridor" on the City's Official Map)
Length	2610'
Number of Blocks	North side: 7 South side: 6
Intersecting Streets	13
Intersections	11 total: 2 cross, 8 "T", 1 offset
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class II
Bus Service	Yes
Utilities & Lighting	Underground utilities & ornamental light poles, except b/w S. Winooski–S. Union
Water Systems	Combined Sewer System Potential for sandier, stormwater friendly soils west of St. Paul or Pine Streets

Recommendations

Proposed Bike Facility	Protected Bike Lane
Recommended Street Type	*"Major Commercial Street (66' ROW, 38' Roadway)" on page 74*



CHERRY ST.

Cherry Street lies entirely within downtown, is only 5 blocks long. It terminates at Battery Park overlooking Lake Champlain and at the First Congregational Church on Winooski Avenue. Its north side is mixed with residential uses, state office buildings and religious institutions, while the south side is almost continuously commercial. The southern side of the street includes a 4-block long section with no intersections, and very few building frontages activating the street as a result of urban renewal activities in the 1970s.

The Burlington City Place property is anticipated to be redeveloped to include retail frontages and reestablish the street segments of St. Paul and Pine between Bank and Cherry. Along with the site's redevelopment, the City plans to reinvest in the streetscape for the four blocks between Battery and Church, based on the 2014 PIAP.

Design Considerations

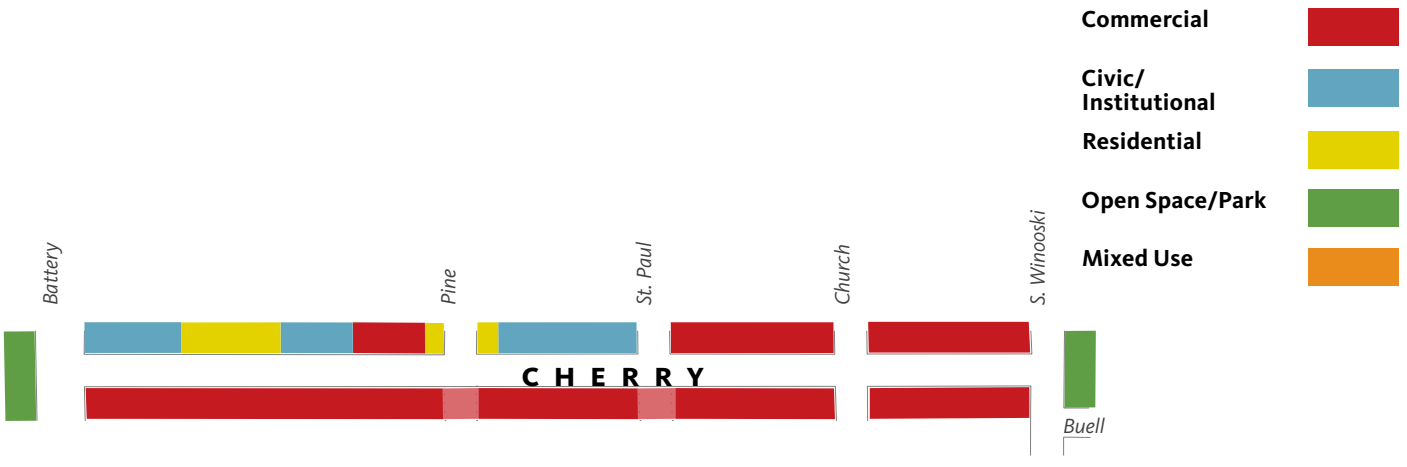
The corridor carries a significant number of bus lines and transit stops as it is one of the east–west streets that frames the new transit center. While only a 66' ROW, traffic counts are relatively low, giving it good potential for walking, biking, and placemaking improvements. The intersection with Battery Street should be an important consideration in future designs for this street, as pedestrian connections to the waterfront have been contemplated in this location, which could be realized if private property on Lake Street below Battery Park is redeveloped. In planning for streetscape improvements in this corridor, designers should be mindful of shadows cast by recent and future redevelopment along the south side of the street.

Existing Character/Uses

Urban Regional Linkages	Lies entirely within Downtown
Terminus within Downtown	West: Battery Park East: First Congregational Church
Terrain	Gently sloped
High Point/Low Point	High: 226' @ Union Low: 186' @ Battery
Views	To Battery Park and lake
Length	2105'
Number of Blocks	North side: 4 South side: 2 (4 blocks with redevelopment of BCP)
Intersecting Streets	5
Intersections	5 total: 3 cross, 2 "T"
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	Yes
Utilities & Lighting	Underground utilities & ornamental light poles, except b/w Battery–St. Paul
Water Systems	On combined sewer system, but has a separate storm and sanitary line available for connections. Possible sandy soils west of St. Paul, more likely west of Pine.

Recommendations

Proposed Bike Facility	Shared Right-of-Way
Recommended Street Type	*"Commercial Slow Street with Transit (66' ROW, 36' Roadway)" on page 70*



BANK ST.

Bank Street is a short street that is somewhat isolated in the center of downtown due to 1970s urban renewal activities. It is almost entirely commercial, with one entire block occupied by the Burlington City Place (BCP). Small storefronts immediately adjacent to Church Street, and a number of older, formerly residential structures that have been converted to commercial/mixed-use and provide strong character on some portions of the street. However, other blocks are lined by parking garages and inactive commercial frontages.Presently, several of the tallest buildings in downtown Burlington are located on Bank Street near the terminus of St. Paul and Pine Street.

Design Considerations

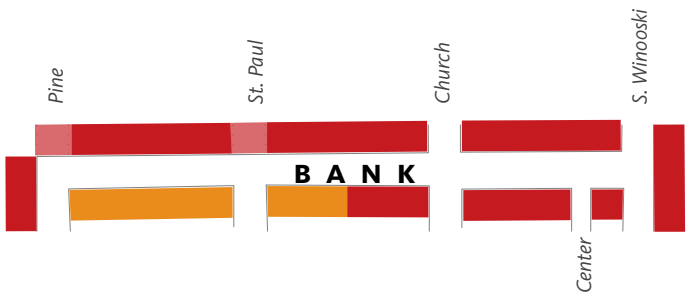
While the street currently experiences little through traffic, the redevelopment of the private Burlington City Place site is likely to transform this corridor, particularly with the reopening of portions of St. Paul and Pine Streets between Bank and Cherry. In the future, it is likely that there will be additional vehicular activity as a result of Bank Street being reintegrated into the downtown transportation grid, and the location of one of the entrances to the redeveloped property. Public improvements to two blocks of Bank Street associated with the redevelopment of the site will emphasize a vibrant and safe pedestrian streetscape and stormwater improvements.

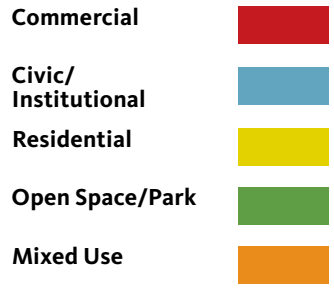
Existing Character/Uses

Urban Regional Linkages	Lies entirely within Downtown
Terminus within Downtown	West: People's United Bank East: City Market
Terrain	Gently sloped
High Point/Low Point	High: 224' @ Winooski Low: 202' @ Pine
Views	none
Length	1275'
Number of Blocks	North: 2 (3 proposed) South: 3
Intersecting Streets	4
Intersections	5 total: 2 (4 proposed) cross, 3 (1 proposed) "T"
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	No
Utilities & Lighting	Overhead utilities b/w Pine–St. Paul; underground utilities b/w St. Paul–Winooski. Ornamental light poles b/w Church–Winooski
Water Systems	West of St. Paul: part of the college street separate stormwater system. East of St. Paul: on the combined sewer. Soil conditions are unknown for infiltration.

Recommendations

Proposed Bike Facility	Shared Use Lane Markings with Traffic Calming
Recommended Street Type	*"Commercial Slow Street (66' ROW, 35' Roadway)" on page 68*





COLLEGE ST.

College Street is one of downtown's most important signature streets and is an important parallel and alternative route to Main Street for vehicles, transit, and bicycles. College Street connects UVM to the waterfront, adjoins City Hall Park, marks perhaps the most intensely used intersection of the Church Street Marketplace, and offers views of Lake Champlain from St. Paul westward. It is primarily commercial with some residential, civic and cultural uses.

Design Considerations

The City Hall Park "pinwheel concept" treats Main and College Streets as an important parallel pair. Designers should, in applying the standards, look for ways to emphasize this distinct relationship particularly through improvements that appeal to pedestrians, enhance downtown's stormwater management infrastructure, and ensure a high level of investment in signage and other street furnishings, as well as "turn-key" street light poles that can accommodate banners and special holiday lighting.

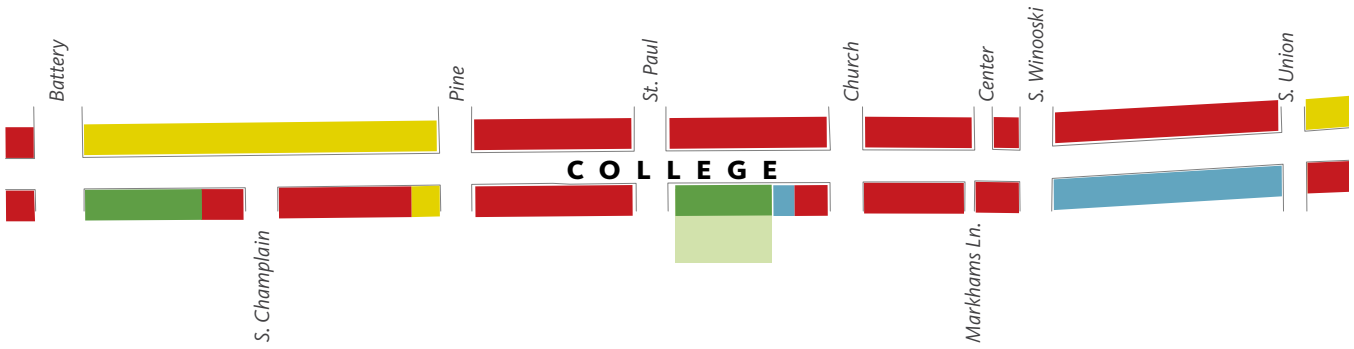
As a 66' ROW, College Street remains an intimately scaled street, while still serving an important role in the vehicular and bus networks within downtown. planBTV Walk/Bike calls for College Street to be a secondary east–west bike route to Main Street, due to its steepness and narrow width, with shared-lane markings indicated as a long-term plan for the street. College Street has a separate storm system west of St. Paul Street; the College Street Stormwater Plan identifies further green infrastructure priorities for this corridor, which should be consulted in coordination with these standards.

Existing Character/Uses

Urban Regional Linkages	East terminus at UVM campus
Terminus within Downtown	West: Lakefront/Boathouse
Terrain	Steeply to gently sloped
High Point/Low Point	High: 209' @ Church/Winooski Low: 137' @ Battery
Views	Lake and mountains to the west, Old Mill uphill to east
Length	2630'
Number of Blocks	North: 5 South: 6
Intersecting Streets	7 (9)
Intersections	8 total
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	Yes
Utilities & Lighting	Underground utilities, except b/w Winooski–Union. Ornamental light poles, except b/w Winooski–Union.
Water Systems	Separate storm system west of St. Paul, to the east, combined. Sandy soils west of S. Champlain, and possibly west of Pine.

Recommendations

Proposed Bike Facility	Shared Use Lane Marking with Traffic Calming
Recommended Street Type	*"Commercial Slow Street (66' ROW, 35' Roadway)" on page 68*



MAIN ST.

Main Street is a gateway and vital artery for downtown and all of Burlington. It connects points east of Burlington to UVM and Champlain College campuses, downtown and to the terminus at Union Station on the waterfront, which is anticipated to once again host passenger rail service. Main Street also connects many important civic and cultural resources in downtown, including Memorial Auditorium (for which a public process will determine future opportunities), the southern terminus of the Church Street Marketplace, City Hall and City Hall Park, Flynn Theater, County Courthouse, the Visitors Bureau, and many retailers and other destinations. In addition to the reconstruction of Main Street itself, several of these key destinations will be revitalized, including City Hall Park and Memorial Auditorium/Gateway Block.

Design Considerations

At 99' of Right of Way, Main Street is among the widest streets in downtown Burlington, and given its role in the downtown network, one with the greatest potential for accommodating all modes of transportation, placemaking, amenities and services that our community has indicated are important in the public realm. Today, the corridor carries significant bus, truck and automobile traffic, and 50–75% of the right of way is utilized by cars for just two travel lanes and on-street parking.

A master plan is being developed for the Main Street corridor from Battery to Union which acknowledges the street's special character within downtown. This plan recommends the conversion of diagonal parking to parallel parking on the corridor to allow for a more equitable balance of space for all modes of transportation and to improve tree health and stormwater management. Through planBTV Walk/Bike, Main Street was identified as the community's highest priority for a protected bike lane.

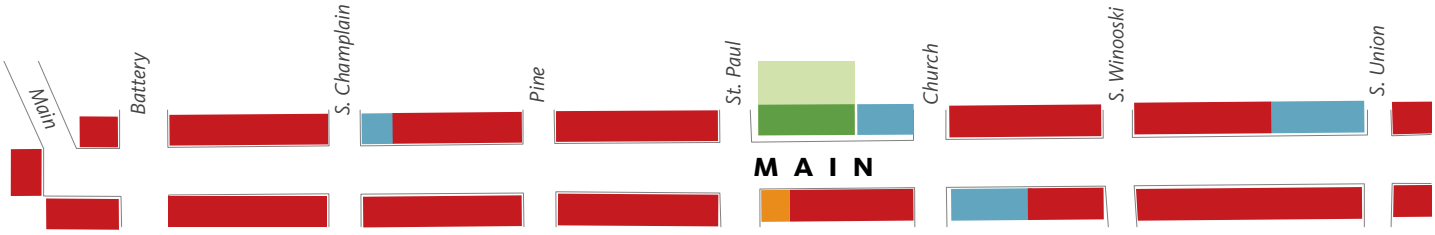
The City Hall Park "pinwheel concept" treats Main and College Streets as an important parallel pair. Designers should, in applying the standards, look for ways to emphasize this distinct relationship particularly through improvements that appeal to pedestrians, enhance downtown's stormwater management infrastructure, and ensure a high level of investment in signage and other street furnishings, as well as "turn-key" street light poles that can accommodate banners and special holiday lighting.

Existing Character/Uses

Urban Regional Linkages	Major historic connector from lakefront to UVM and all points east
Terminus within Downtown	West: Union Station
Terrain	Steeply to gently sloped
High Point/Low Point	High: 207' @ Union Low: 125' @ Battery Mid: 192' @ Winooski
Views	Lake and mountains
Length	2630'
Number of Blocks	North: 6 South: 6
Intersecting Streets	7
Intersections	7 total: 6 cross, 1 "T"
Prevailing ROW	99'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class II
Bus Service	Yes
Utilities & Lighting	Underground utilities. Ornamental light poles b/w St. Paul–Church
Water Systems	Combined sewer length of corridor. Possible sandy soils west of Pine and maybe further up the hill to the East

Recommendations

Proposed Bike Facility	Protected Bike Lane
Recommended Street Type	*"Special Commercial Street (99' ROW, 38' Roadway)" on page 76*



KING ST.

King Street has a primarily residential character, with urban multi-family infill housing developments and the King Street Center as recent additions to the character of the street. Additional infill is underway at the corner of St. Paul and King, with the Eagle's Landing project. There are pockets of commercial activity throughout this 6-block corridor, particularly near the terminus of Battery Street and the Ferry Dock/Perkins Pier on the waterfront.

Design Considerations

While costly and challenging, the overhead wires should be buried, and the wooden poles and cobrahead lights should be replaced with pedestrian-scale lighting as significant reinvestments along King Street are made in the future. King street will provide an excellent example of how the standards are applied to primarily residential streets within the downtown core.

Existing Character/Uses

Urban Regional Linkages	Lies entirely within Downtown
Terminus within Downtown	West: King Street Dock East: Private home
Terrain	Gently sloped
High Point/Low Point	High: 212' @ Union Low: 120 @ Battery
Views	Lake and mountain views to the west from the last block; terminal view east of historic home
Length	2620'
Number of Blocks	North: 6 South: 6
Intersecting Streets	7
Intersections	7 total: 7 cross
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	Yes
Utilities & Lighting	Overhead utilities b/w Battery–Union. No ornamental light poles.
Water Systems	On combined sewer; infiltrator system near intersection of Battery Street

Recommendations

Proposed Bike Facility	Shared Right-of-Way
Recommended Street Type	West of Church Street: *"Commercial Slow Street (66' ROW, 35' Roadway)" on page 68* East of Church Street: *"Minimum Commercial Street (66' ROW, 28' Roadway)" on page 72*

Commercial

Civic/ Institutional

Residential

Open Space/Park

Mixed Use

MAPLE ST.

Maple Street, a primarily residential street, is the southern boundary of the downtown area, particularly for the purpose of the Great Streets standards. It is an important east–west connection between the waterfront at Perkins Pier and UVM and Champlain College up the hill. While primarily residential, the street experiences heavy traffic due to the section west of Pine Street used as a cut-through to access Battery Street, and because the corridor is a parallel and alternative route between downtown and the campuses. New urban, multi-family infill development is underway at the Champlain College Eagle's Landing development at the corner of Maple and St. Paul.

Like King Street, Maple has a 66' ROW, with overhead wires, wooden poles, and cobra head lights. This infrastructure presents a challenge in terms of cost of replacement. The tree canopy is well developed on the side of the street without utility lines.

Design Considerations

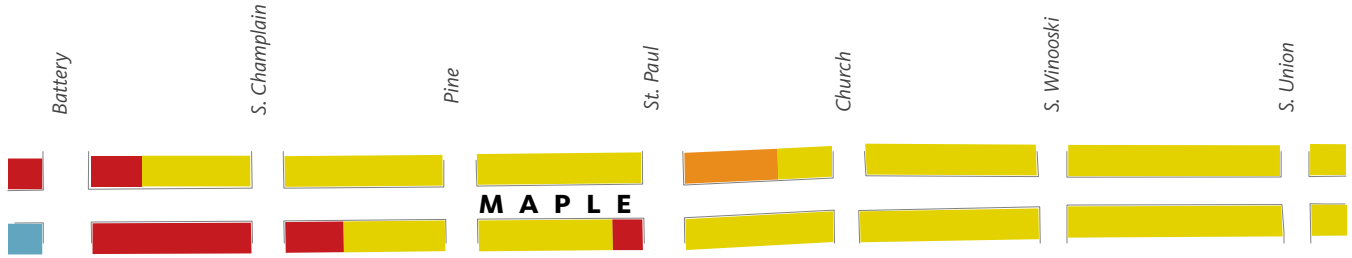
While burial of the overhead utilities may be a long-term strategy if the street is comprehensively redeveloped, it is not the highest priority for utility upgrades. Absent a full redevelopment of the street, BED should investigate whether retrofit options could be available to allow decorative fixtures on wooden poles in order to allow lighting upgrades consistent with these standards. PlanBTV Walk/Bike indicates the long-term bike facility for this street should include shared-lane markings.

Existing Character/Uses

Urban Regional Linkages	East: connects to UVM campus
Terminus within Downtown	West: Lakefront/Roundhouse Pk.
Terrain	Sloped
High Point/Low Point	High: 228 @ Union Low: 110' @ Battery
Views	Lake and mountains to the west when traveling downhill from points along the corridor
Length	2630'
Number of Blocks	North: 6 South: 6
Intersecting Streets	7
Intersections	7 total: 7 cross
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	No
Utilities & Lighting	Overhead utilities. No ornamental light poles
Water Systems	Combined sewer system. Soil conditions unknown

Recommendations

Proposed Bike Facility	Shared Use Lane Markings with Traffic Calming
Recommended Street Type	*"Downtown Residential Street (66' ROW, 30' Roadway)" on page 78*



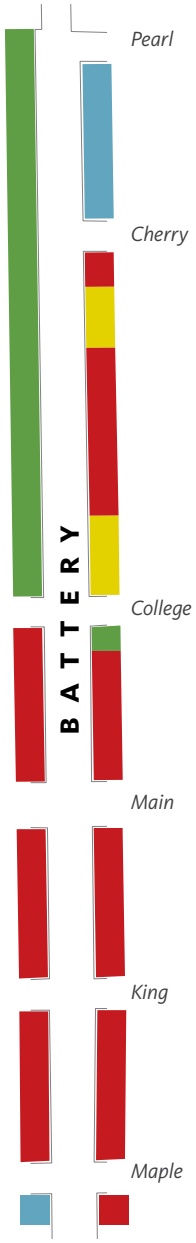
Primary North–South Streets

BATTERY ST.

Battery Street is one of only three streets in downtown with a 99' right of way, and it serves a unique role within downtown. It functions as the edge between downtown and the waterfront, and the height and architectural style of the buildings along its eastern edge vary widely. From many points along the corridor, particularly from adjacent Battery Park, one can catch a glimpse of Lake Champlain and Adirondacks; however, its width and high volume of traffic can cause it to be perceived as an impediment for pedestrians and bicycles. In contrast, the two southern blocks, from Main to Maple, are exceptionally appealing blocks for walking and could be for biking with some improvements. This is due to parking on both sides, slower traffic speeds on a flatter terrain, and exceptionally attractive historic architectural character on its edges.

Design Considerations

Expansion of Battery Street south through the rail yard to Pine Street is being studied, and Battery Street between College and King Streets have the potential to become important connections from the terminus of Main Street at Union Station to the waterfront, particularly for bike and pedestrian connectivity. While many of the elements of the standards can be applied here, a corridor plan is recommended for Battery due to its special considerations.



Existing Character/Uses

Urban Regional Linkages	Major historic connector to Old North End and points north
Terminus within Downtown	South: rail yards
Terrain	Sloped to gently sloped
High Point/Low Point	High: 212' @ Pearl Low: 110' @ Maple
Views	Lateral views to lake
Length	2560'
Number of Blocks	West: 4 East: 5
Intersecting Streets	6
Intersections	6 total: 4 cross, 2 "T"
Prevailing ROW	99'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class II
Bus Service	Yes
Utilities & Lighting	Underground utilities b/w Pearl–Main; overhead utilities b/w Main–Maple. No ornamental light poles.
Water Systems	On combined sewer, except for the College St. intersection. Likely sandy soils suitable for stormwater infiltration.

Recommendations

Proposed Bike Facility	Protected Bike Lane
Recommended Street Type	To be determined by a future corridor study

Commercial

Civic/ Institutional

Residential

Open Space/Park

Mixed Use

S. CHAMPLAIN ST.

South Champlain is a quiet street bisected within downtown by Urban Renewal activity. Within the downtown area, its ROW is 66', and its traffic counts are relatively low, in part due to its northerly termination at College. Its roadway is only 30', more typical of purely residential blocks.

Design Considerations

Except for the block between College and Main Streets, where on-street metered parking and tour bus stops exist, designers should utilize residential ensembles for this street.

Existing Character/Uses

Urban Regional Linkages	Bisected within downtown; northern section resumes at Pearl Street, connecting to Old North End and the Beltline
Terminus within Downtown	North: housing on College St.
Terrain	Sloped
High Point/Low Point	High: 166' @ College Low: 125' @ Maple
Views	none
Length	1310'
Number of Blocks	West: 3 East: 3
Intersecting Streets	4
Intersections	4 total: 3 cross, 1 "T"
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	No GMT service; Tour Bus parking between College and Main
Utilities & Lighting	Underground utilities b/w College–Main; overhead utilities b/w Main–Maple. No ornamental light poles.
Water Systems	On combined sewer, except for the College St. intersection. Likely sandy soils suitable for stormwater infiltration.

Recommendations

Proposed Bike Facility	Shared Right-of-Way
Recommended Street Type	North of Main Street: *"Commercial Slow Street (66' ROW, 35' Roadway)" on page 68* South of Main Street: *"Downtown Residential Street (66' ROW, 30' Roadway)" on page 78*

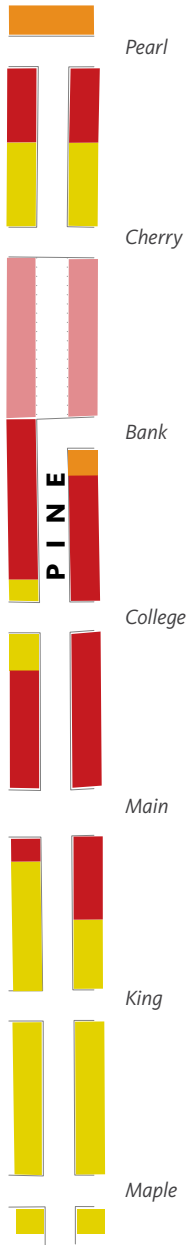
Commercial
Civic/ Institutional
Residential
Open Space/Park
Mixed Use

PINE ST.

Pine Street is a primary link into downtown from the south, and some of its features will be upgraded as far north as Main Street as part of the Champlain Parkway project. Pine Street has a number of unusual features. Within its 66' ROW, its character changes from residential on the south to increasingly dense commercial on the north; notably, a restored block between Bank and Cherry will pass by the Burlington City Place (BCP) redevelopment. The northernmost block is a mix of residential and commercial uses, is adjacent to the parking lot for the Cathedral of the Immaculate Conception, and then terminates at a mixed-use block on Pearl.

Design Considerations

It is a strong candidate for direct application of the typical slow street standards for streets with 66' ROW. South of Main Street, the corridor is an important bus route. planBTV Walk/Bike indicates that Pine Street should have conventional bike lanes or shared lane markings based on width and location of on-street parking.



Existing Character/Uses

Urban Regional Linkages	South: Major connector to Queen City Park
Terminus within Downtown	Pearl St on North
Terrain	Sloped
High Point/Low Point	High: 220' @ Pearl Low: 125' @ Maple
Views	none
Length	2190' (2530')
Number of Blocks	West: 5 East: 5 (6)
Intersecting Streets	7
Intersections	7 total: 5 cross, 2 "T"
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III b/w Pearl–Cherry, Bank–Main Class II b/w Main–Maple
Bus Service	Yes
Utilities & Lighting	Underground utilities b/w Bank–Main; overhead utilities b/w Main–Maple. No ornamental light poles.
Water Systems	Combined sewer except for College St. intersection; possible sandy soils for infiltration

Recommendations

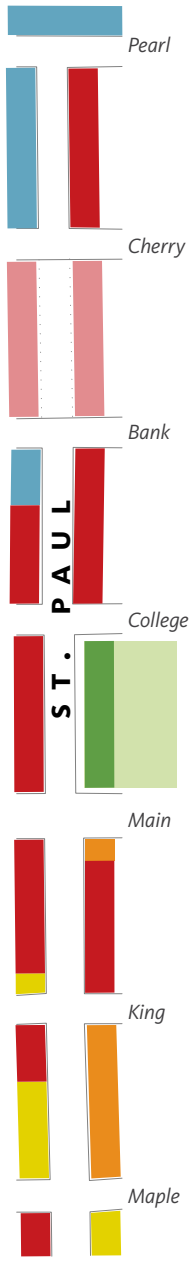
Proposed Bike Facility	Shared Use Lane Markings and/or Buffered/ Conventional Bike Lanes
Recommended Street Type	North of Cherry Street: *"Commercial Slow Street (66' ROW, 35' Roadway)" on page 68* Cherry to Bank Street *"Minimum Commercial Street (66' ROW, 28' Roadway)" on page 72* Bank to Main Street: *"Commercial Slow Street (66' ROW, 35' Roadway)" on page 68* Main to King Street: *"Commercial Slow Street with Transit (66' ROW, 36' Roadway)" on page 70*

ST. PAUL ST.

St. Paul serves as a gateway into downtown from Route 7 and Shelburne Street from the south. The redevelopment of the private Burlington City Place (BCP) property anticipates that the block between Cherry and Bank Streets will be re-established, where it will terminate at the new transit center. Its prevailing ROW is 66'; however, there are several exceptions, including south of Main where it was made wider to accommodate diagonal parking, and on the proposed BCP block, which will only be 60'. The block that adjoins City Hall Park is currently closed to vehicles during the Saturday Farmers Market, and was recently reconstructed. St. Paul has numerous historic structures, and will be home to the new Eagle's Landing development of Champlain College between King and Maple.

Design Considerations

The City Hall Park "pinwheel concept" treats St. Paul and Church Streets as an important parallel pair that bracket City Hall Park. Designers should, in applying the standards, look for ways to emphasize this distinct relationship particularly through improvements that appeal to pedestrians, enhance downtown's stormwater management infrastructure, and ensure a high level of investment in signage and other street furnishings, as well as "turn-key" street light poles that can accommodate banners and special holiday lighting.



Existing Character/Uses

Urban Regional Linkages	South: Major historic connector to Shelburne Rd.
Terminus within Downtown	North: storefronts @ Pearl
Terrain	Gently sloped
High Point/Low Point	High: 222' @ Pearl Low: 149' @ Maple
Views	none
Length	2190' (2530')
Number of Blocks	West: 5 (6) East: 5 (6)
Intersecting Streets	7
Intersections	7 total: 4 (6) cross, 3 (1) "T"
Prevailing ROW	66' b/w Pearl–Main 82.5' b/w Main–Maple
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III b/w Pearl–Cherry, Bank–Main Class II b/w Main–Maple
Bus Service	Yes, b/w Pearl–Cherry (Transit Center), and south of Main St
Utilities & Lighting	Underground utilities b/w Pearl–Cherry, Bank–King; overhead b/w King–Maple. Ornamental light poles b/w College–Main.
Water Systems	Primarily combined (may be some slippage of runoff to separate system). Soil conditions are unknown

Recommendations

Proposed Bike Facility	Shared Right-of-Way
Recommended Street Type	North of Cherry Street: *"Commercial Slow Street with Transit (66' ROW, 36' Roadway)" on page 70* Cherry to Bank Street *"Minimum Commercial Street (66' ROW, 28' Roadway)" on page 72* South of Bank Street: *"Commercial Slow Street with Transit (66' ROW, 36' Roadway)" on page 70*

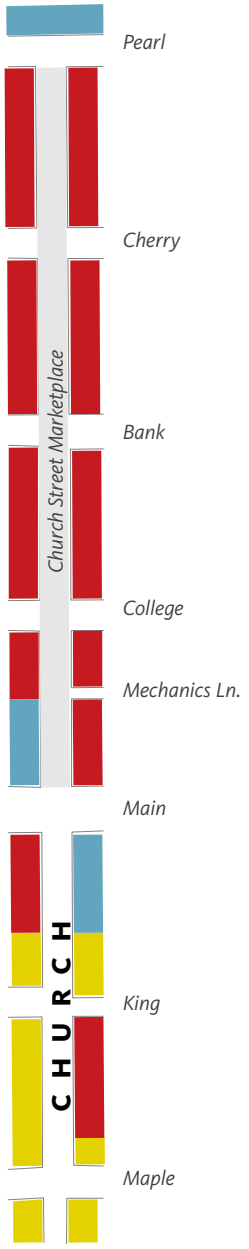
CHURCH ST.

For several decades, Church St. has been the primary commercial street in downtown. The removal of motor vehicles (except deliveries) and the creation of the Church Street Marketplace proved to be an enormous social and economic success, and cemented Church Street as the most active street in downtown for pedestrian and retail activity. The absence of vehicles also made it unique, as did the creation of a separate management and oversight entity. Finally, the investments in the physical design of the street itself further ensure its unique character and role in downtown.

These standards seek to preserve that special identity, while more fully integrating Church Street Marketplace with other downtown streets, and with City Hall Park. For example, the standards call for expanding the installation of Church's ornamental street lights through most of downtown, but do not extend its special and distinctive paving beyond a limited section of Main and College Streets to connect to City Hall Park. Importantly, these standards are not intended to replace the materials and furnishing currently in use on the Marketplace, nor apply the unique Marketplace furnishings wholesale throughout the rest of downtown.

Design Considerations

The two southern blocks of Church are more typical of the rest of downtown, with 66' ROW, 35' roadway, and a mix of civic, commercial and residential uses. The standards should be judiciously applied to these blocks where some streetscape improvements have already been implemented, notably between Main and King.



Existing Character/Uses

Urban Regional Linkages	Lies entirely within Downtown
Terminus within Downtown	North: Unitarian Church @ Pearl
Terrain	Gently sloped
High Point/Low Point	High: 228' @ Pearl Low: 160' @ Maple
Views	Terminal view of First Unitarian Universalist Church
Length	2520'
Number of Blocks	West: 6 East: 6
Intersecting Streets	7
Intersections	7 total: 6 cross, 1 "T"
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class IV b/w Pearl–Main Class III b/w Main–Maple
Bus Service	No
Utilities & Lighting	Underground utilities b/w Pearl–King; overhead utilities b/w King–Maple. Ornamental light poles b/w Pearl–King.
Water Systems	Combined sewer. Some reports of sewer surcharge in buildings likely from roof drains not being able to drain to systems

Recommendations

Proposed Bike Facility	Shared Right-of-Way
Recommended Street Type	North of Main: No recommended changes South of Main: *"Commercial Slow Street (66' ROW, 35' Roadway)" on page 68*

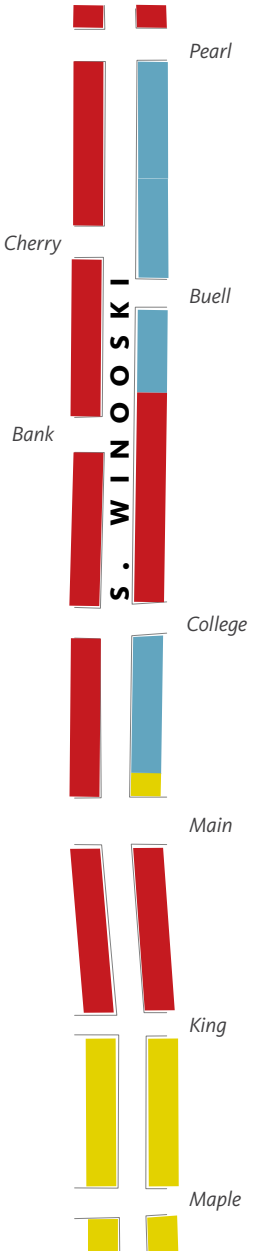
Commercial
Civic/ Institutional
Residential
Open Space/Park
Mixed Use

S. WINOOSKI AVE.

Winooski is an important connector street from the north. The blocks between Pearl and King Streets are distinctly different from the one between King and Maple, which is primarily residential and has relatively low traffic counts. From Pearl to Main, traffic counts are high, and a 40' roadway handles four lanes of traffic (the only street to do so besides Battery) within a 66' ROW. The street is more automobile-oriented than most in downtown, in that it has numerous driveway curb cuts and street-fronting parking lots. Its intersection with Main Street is the location of highest traffic counts and crashes, and is also the site for the potentially greatest transformation from the proposed redevelopment of the "Gateway Block"—the eastern corners of Main and Winooski—per the planBTV Downtown & Waterfront Master Plan.

Design Considerations

Though Winooski and Union are very different streets in character, use and dimension, their location within the larger traffic network makes them an operational pair. North and south of downtown, Winooski is a one-way street traveling south, while Union accommodates one-way traffic traveling north. Any future redevelopment of the Gateway Block will have a major impact on the design and operation of both streets. Furthermore, planBTV Walk/Bike calls for a protected bike lane on S. Winooski within the downtown area. These streets will benefit from a dedicated master plan to evaluate how these streets can meet their current and future transportation demands. The City began a scoping study for lane configuration options for this pair of streets in 2017.



Existing Character/Uses

Urban Regional Linkages	North: major historic connector to Winooski
Terminus within Downtown	none
Terrain	Gently sloped
High Point/Low Point	High: 232' @ Pearl Low: 185' @ King
Views	none
Length	2530'
Number of Blocks	West: 6 East: 5
Intersecting Streets	7
Intersections	7 total: 6 cross, 1 "T"
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class I
Bus Service	Yes
Utilities & Lighting	Underground utilities b/w Pearl–King; overhead utilities b/w King–Maple. Decorative light poles b/w Pearl–Main.
Water Systems	Combined sewer system

Recommendations

Proposed Bike Facility	Protected Bike Facility
Recommended Street Type	Pearl to Main: *"Major Commercial Street (66' ROW, 38' Roadway)" on page 74* Main to King: *"Commercial Slow Street (66' ROW, 35' Roadway)" on page 68* King to Maple" *"Downtown Residential Street (66' ROW, 30' Roadway)" on page 78*

Commercial

Civic/ Institutional

Residential

Open Space/Park

Mixed Use

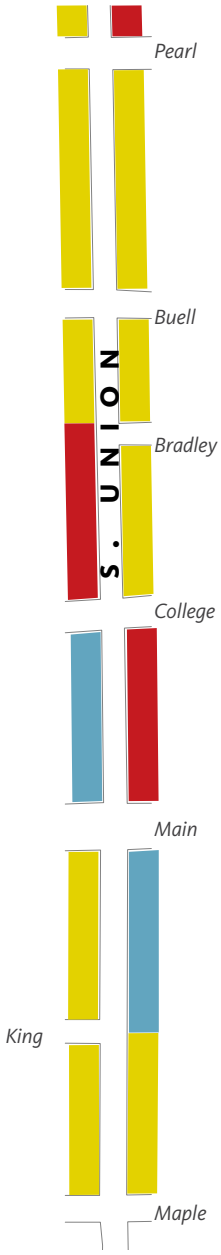
S. UNION ST.

Design Considerations

S. Union is primarily a residential street that marks the eastern edge of the downtown core. Because of the location of the library, College Street Congregational, Memorial Auditorium and Edmunds School along College and Main, as well as the strong pedestrian, bike, transit and vehicular linkages up the hill to Champlain College and UVM, Union has a blended role as both a residential street and a downtown access corridor. As one of the options for entering Burlington from the south at Route 7/ Shelburne St., S. Union acts as a one-way relief corridor for the northbound traffic loads on Winooski, and this role may only intensify if the proposed "gateway" sites are redeveloped as planned. Therefore, the design challenge on Union is to maintain the residential scale and character while accommodating traffic requirements, all on a 30' roadway within a 66' ROW.

Design Considerations

Though Winooski and Union are very different streets in character, use and dimension, their location within the larger traffic network makes them an operational pair. North and south of downtown, Winooski is a one-way street traveling south, while Union accommodates one-way traffic traveling north. Any future redevelopment of the Gateway Block will have a major impact on the design and operation of both streets. Furthermore, planBTV Walk/Bike calls for a protected bike lane on S. Winooski within the downtown area. These streets will benefit from a dedicated master plan to evaluate how these streets can meet their current and future transportation demands. The City began a scoping study for lane configuration options for this pair of streets in 2017.



Existing Character/Uses

Urban Regional Linkages	Connector to Winooski and Shelburne Rd.
Terminus within Downtown	none
Terrain	Gently sloped
High Point/Low Point	High: 238' @ Pearl Low: 214' @ Bradley
Views	none
Length	2530'
Number of Blocks	West: 5 East: 5
Intersecting Streets	7
Intersections	7 total: 5 cross, 2 "T"
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	No
Utilities & Lighting	Overhead utilities b/w Pearl–Maple. No ornamental light poles.
Water Systems	Combined sewer. Likely to have tighter soils and ground water. High velocity runoff from Bradley St. and other steep sloped intersecting streets impact stormwater management on this street.

Recommendations

Proposed Bike Facility	Protected Bike Lane
Recommended Street Type	North of Main Street: *"Minimum Commercial Street (66' ROW, 28' Roadway)" on page 72* South of Main Street: *"Downtown Residential Street (66' ROW, 30' Roadway)" on page 78*

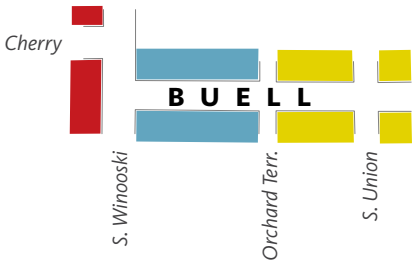
Other Streets

BUELL ST.

Buell is a handsome residential street with one-way eastbound traffic. Its gateway block runs between two historic church structures at Winooski Avenue, and continues east up the hill. It has a 30' roadway within a 66' ROW, typical for downtown residential blocks.

Design Considerations

The sidewalk and tree belt design should be improved for stormwater capture where possible. However, preserving healthy trees on this street should take priority over improvements to stormwater collection that would necessitate the removal or destruction of these trees.



Existing Character/Uses

Urban Regional Linkages	Lies entirely within Downtown
Terminus within Downtown	West: Marketplace Garage
Terrain	Gently sloped
High Point/Low Point	High: 226' @ Low: 217' @ Union
Views	none
Length	580'
Number of Blocks	North: 2 South: 2
Intersecting Streets	3
Intersections	3 total: 3 cross
Prevailing ROW	66'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	No
Utilities & Lighting	Overhead utilities b/w Winooski–Union. No ornamental light poles.
Water Systems	Combined sewer system. Infill over old ravine.

Recommendations

Proposed Bike Facility	Shared Right-of-Way
Recommended Street Type	*"Downtown Residential Street (66' ROW, 30' Roadway)" on page 78*

Commercial

Civic/ Institutional

Residential

Open Space/Park

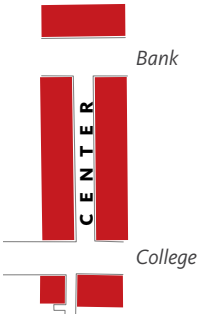
Mixed Use

CENTER ST.

Center Street is a charming one-block anomaly within the continuous grid of downtown. It has a ~24' one-way northbound roadway within a 36' ROW, both of which are exceptionally narrow. There is currently no treebelt or stormwater capture. The block's low traffic counts make it desirable as a pedestrian and bike route and destination, but its existing sidewalks (6' west side and 8' east side) are too narrow to adequately support such uses.

Design Considerations

This is a good candidate for testing possible pilot projects, including permeable parking lanes in conjunction with stormwater and other innovative strategies.



Existing Character/Uses

Urban Regional Linkages	Lies entirely within Downtown
Terminus within Downtown	North: Gas station at Bank South: Storefronts @ College
Terrain	Gently sloped
High Point/Low Point	High: 220' @ Bank Low: 207' @ College
Views	none
Length	465'
Number of Blocks	1
Intersecting Streets	2
Intersections	2 total: 2 cross
Prevailing ROW	36'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Future Design Speed	≤ 25 MPH
Bus Service	No
Utilities & Lighting	Underground utilities with decorative light poles.
Water Systems	Combined sewer system. Soils are unknown

Recommendations

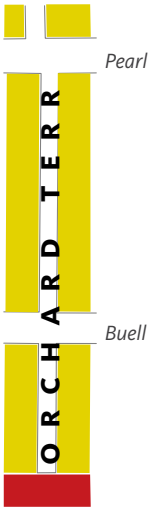
Proposed Bike Facility	Shared Right-of-Way
Recommended Street Type	*"Minimum Commercial Street (66' ROW, 28' Roadway)" on page 72*

ORCHARD TERRACE

Within the downtown core, there are two residential blocks of Orchard Terrace "hidden" just outside of the commercial core, with a one-way, northbound 25' roadway within a 35' ROW.

Design Considerations

Most of this street lacks a tree belt, and therefore, alternative stormwater infrastructure.



Existing Character/Uses

Urban Regional Linkages	Lies entirely within Downtown
Terminus within Downtown	North: Private home @ Pearl South: Cul-de-sac/City Market
Terrain	Gently sloped
High Point/Low Point	High: 236' @ Pearl Low: 218' @ end of street
Views	none
Length	780'
Number of Blocks	2
Intersecting Streets	2
Intersections	2 total: 2 cross
Prevailing ROW	35'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	No
Utilities & Lighting	Overhead utilities. No ornamental light poles.
Water Systems	Sanitary sewer only. Unknown soil conditions.

Recommendations

Proposed Bike Facility	Shared Right-of-Way
Recommended Street Type	No proposed change

Commercial

Civic/ Institutional

Residential

Open Space/Park

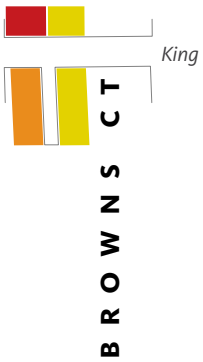
Mixed Use

BROWNS COURT

Browns Court is a half-block, dead-end street lying between residences and the Champlain College's Eagles Landing project. It has a 20' roadway within a 30' ROW, along with overhead utilities. It is a unique condition within downtown.

Design Considerations

The City has leased this street to Champlain College for maintenance and improvements through 2066. Any modification of the street by Champlain College should include the judicious application of these standards to this special condition. This street is a good candidate for a shared street.



Existing Character/Uses

Urban Regional Linkages	Lies entirely within Downtown
Terminus within Downtown	North: housing @ King South: dead end @ Eagle's Landing
Terrain	Flat
High Point/Low Point	High: 172' @ end of street Low: 171' @ King
Views	none
Length	150'
Number of Blocks	1
Intersecting Streets	1
Intersections	1 total: 1 cross
Prevailing ROW	30'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	No
Utilities & Lighting	Overhead utilities. No ornamental light poles.
Water Systems	Sanitary sewer only. Soil conditions unknown, but likely not sandy.

Recommendations

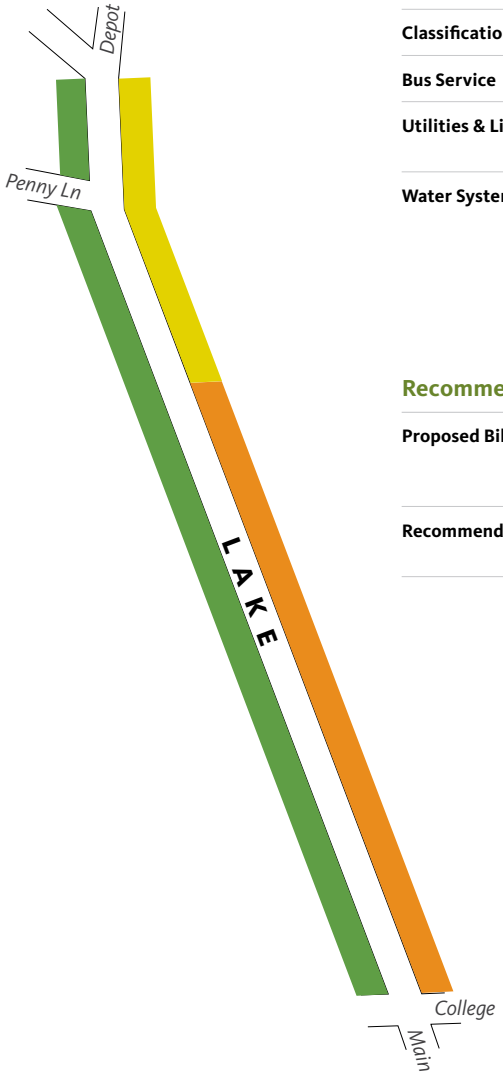
Proposed Bike Facility	Shared Right-of-Way
Recommended Street Type	No proposed change

LAKE STREET

Lake Street is the only north-south street connecting the downtown core directly to waterfront amenities. While it functions as the edge between downtown and the waterfront, its relatively flat elevation adjacent to the Battery Park Hill make it feel separated from the rest of downtown, particularly by pedestrians and bicyclists. From many points along the corridor, particularly north of Pease Lot, one can catch a glimpse of Lake Champlain and Adirondacks. Newer redevelopment activity along the east side, and the improvements to Waterfront Park and Waterfront Access North (skatepark) have increased vehicular, pedestrian and bicycle traffic in this corridor. Lake Street was studied in the 2007 Waterfront/ College Street Access Plan, which included recommendations for improving transportation circulation, aesthetics, and wayfinding. Lake Street was also studied in 2009 as part of the Waterfront Access North Scoping Study, with recommendations for the corridor primarily focused on improving stormwater management, and for potential east-west connections from Battery Street to Lake Street.

Design Considerations

The sidewalk and tree belt design should improve the grade of the street to better handle stormwater capture and conveyance, to address areas of localized flooding.



Existing Character/Uses

Urban Regional Linkages	Lies entirely within Downtown from Depot Street to College Street
Terminus within Downtown	North: Waterfront Skate Park South: College Street intersection
Terrain	Flat
High Point/Low Point	High: 113' Low: 106'
Views	Lateral views of Waterfront Park and the lake and mountains to the west
Length	1584'
Number of Blocks	3
Intersecting Streets	Penny Lane, Depot Street, College Street
Intersections	3 total: 1 cross 2 "T"
Prevailing ROW	49.5'
Prevailing Roadway	Review existing street dimensions on *page 64*.
Classification	Class III
Bus Service	From College Street to access Pease Lot
Utilities & Lighting	Ornamental Street Lighting - Pole Top mounted fixtures
Water Systems	Separate storm/sanitary sewer. Majority stormwater managed by swales on west side of road, discharging to Lake Champlain. Sand filter system at north end near skatepark/Depot Street. Near College Street, discharging to College St. separate stormwater system.

Recommendations

Proposed Bike Facility	Shared Use Lane Markings with Traffic Calming to intersections with Bike Path/ Depot Street
Recommended Street Type	*"Minimum Commercial Street (66' ROW, 28' Roadway)" on page 72*

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